

# City of Weslaco

## Water Treatment Plant Project Update

Tuesday, September 3, 2013



**CDM  
Smith**

# Presentation Outline

- Project Background
- Objectives of current project
- Status of WTP Expansion
- Questions

# WTP Project Background

- Weslaco WTP originally constructed in 1945
- Last major expansion in 1983 with population of 20,000 in 7,200 homes
- Current population of 38,000 in 15,000 homes
- Existing WTP capacity is 8.12 MGD
- Brackish Groundwater well capacity of 0.864 MGD
- Total Existing Capacity of 8.98 MGD
- Existing Site Constraints make Expansion Difficult

# WTP Project Background

- WTP out of compliance on 6 different items (2009-11 TCEQ)
  - Not enough Raw Water Pumping Capacity
  - Not enough High Service Pumping Capacity
  - Not enough Treatment Capacity
  - Not enough Onsite Storage Capacity
  - Not enough Offsite Storage Capacity
- NWWTP out of compliance (2007-2009 TCEQ)
- City responding to required work in WWTP and WTP simultaneously

# Project Background

- Preliminary Engineering Report - Completed September 2011
  - Addressed TCEQ concerns
  - Addressed Growth
- Task 1: Water Demands - How much water is needed for the next 20 years?
- Task 2: Water Rights - How much water do you need to make sure you can meet the demands?
- Task 3: Water Treatment Plant Assessment - How should the WTP be expanded?
- Task 4: Distribution System Assessment - Once we expand the WTP can we get the water to where it is needed within the City?
- Task 5: Debt Capacity Assessment - How much does all of this cost and how do we pay for it?

# Status Update: How much water is needed?

Year	Population Projection	Total Connections	Total Average Daily Demand (MGD)	Total Max Day Demand (MGD)
2015	38,100	14,654	10.20	16.32
2020	42,150	16,211	11.28	18.05
2025	46,578	17,911	12.47	19.95
2030	51,650	19,865	13.83	22.12

Current capacity of WTP and well is 8.98 MGD

- Using TCEQ standards for demand/connection

# Optimized 10 MGD Expansion

- Determined that 2 million gallons per day (MGD) of additional capacity could be cost effectively added to existing WTP with only minor improvements.
- Determined additional 10 MGD expansion to meet expected demands to 2025/2030 with
  - Modular construction of new 8MGD facility to prepare for cost effective future expansion
  - Water conservation program
- Rehabilitation of Existing 8 MGD to improve functionality and bring equipment, electrical, instrumentation, and controls to current industry standards

# Optimized 10 MGD Expansion

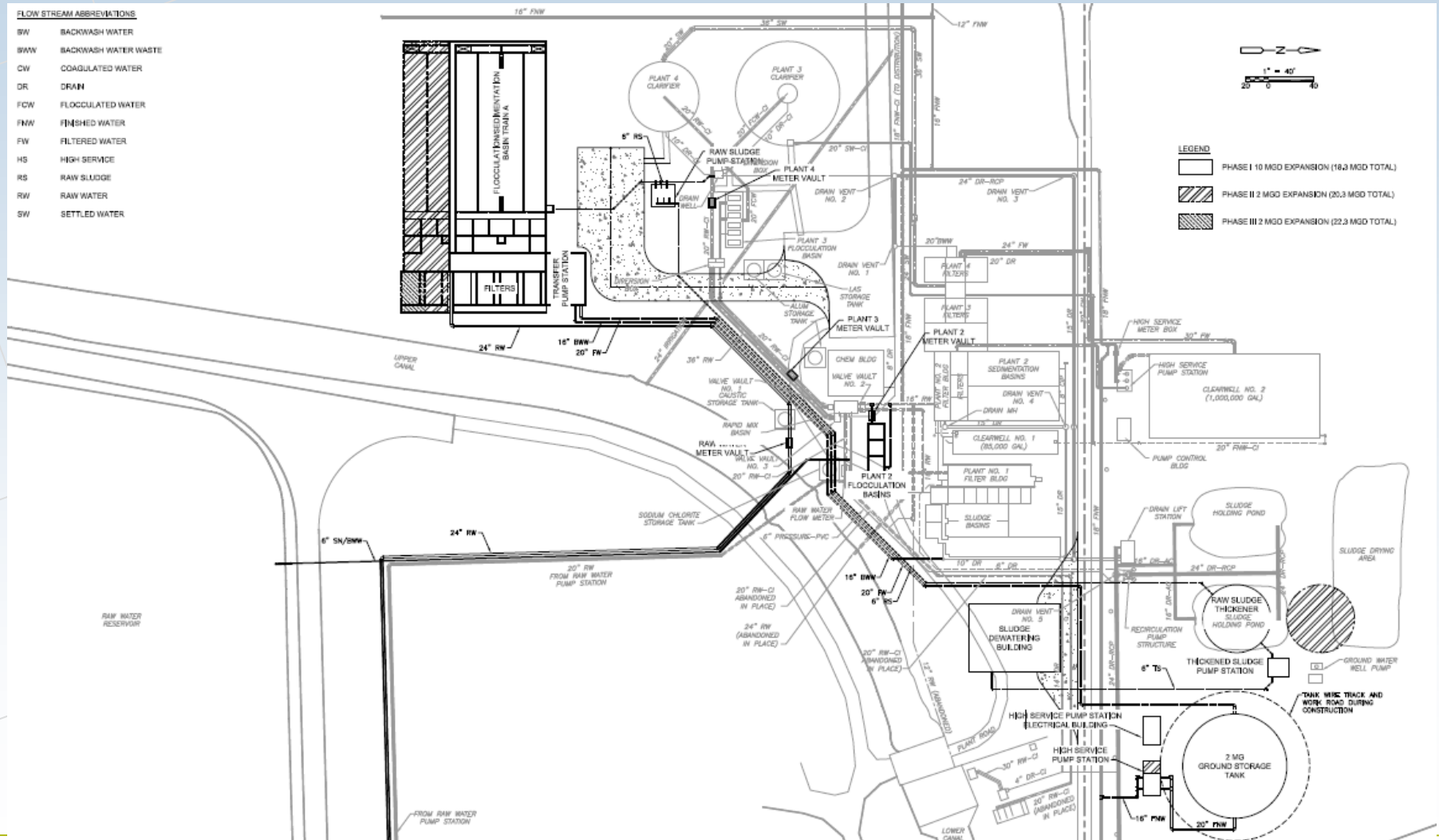
- Useful life of new plant with maintenance
  - 50 years concrete
  - 40 years for electrical
  - 20 years for rotating machinery
- Look at Future Expansion when demand approaches 18 MGD



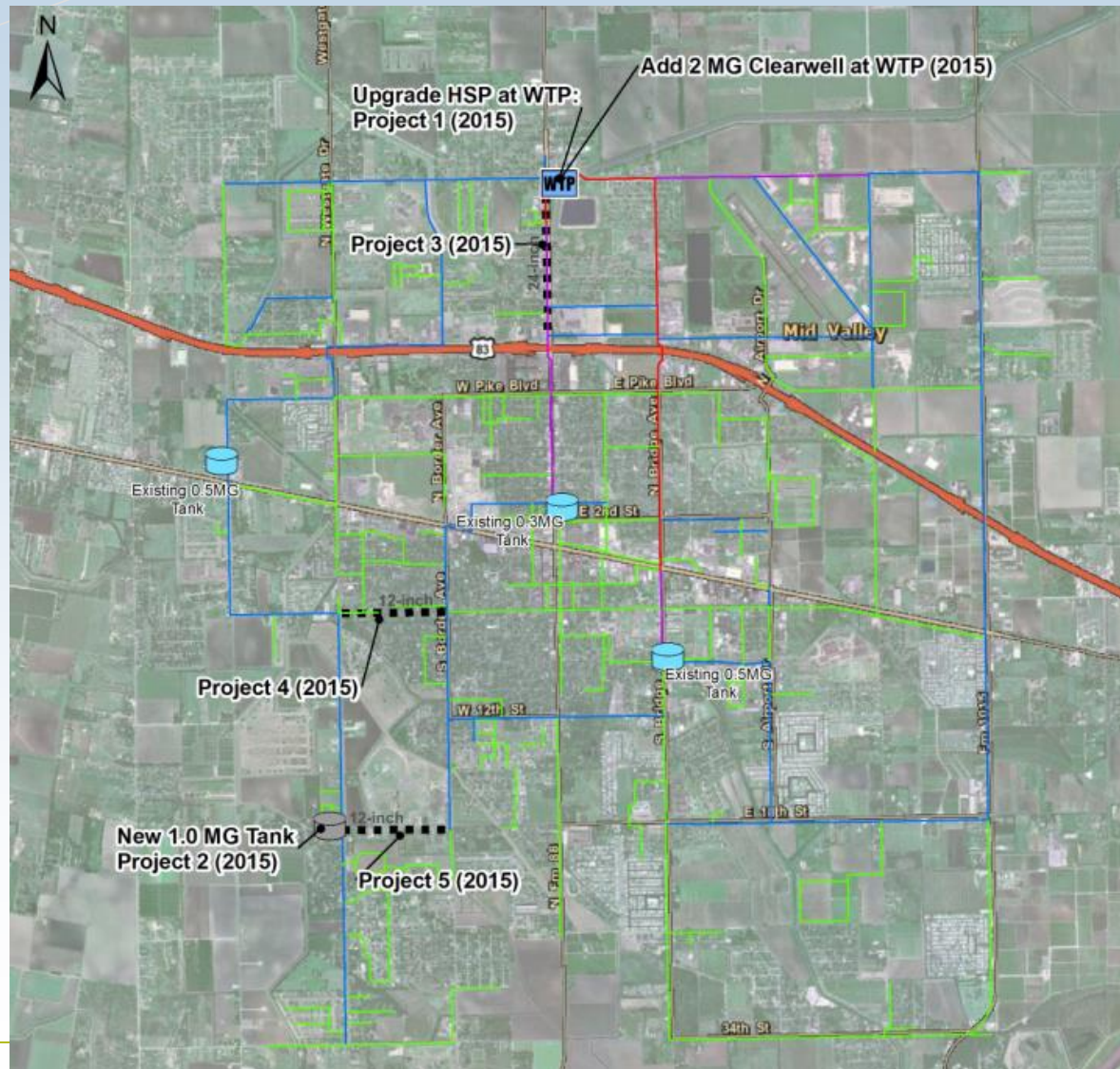
# Necessary Distribution System Improvements – Important to get the water to where it is needed

- To Meet 2015 Water Demand
  - Build New 1.0 Mgal Elevated Storage Tank
  - Install New 20-inch Transmission Main along N. Texas Blvd.
  - Install New 12-inch Main along W. 6<sup>th</sup> Street
  - Install New 12-inch Main along W. 18<sup>th</sup> Street
- To Meet 2020 Water Demand
  - Install Additional Pump to the WTP High Service Pump Station
  - Install New 12-inch Main along S. Border Ave.
  - Install New 16-inch Main along E. 6<sup>th</sup> Street / Business Hwy 83
  - Install New 16-inch Main along International Blvd.

WTP Phased Expansion: Expand Existing Structures to 10.3 MGD + New 8 MGD Surface WTP = 18.3 MGD



# Aerial Drawing of Distribution System Improvements



# Recommended Project Planning Costs From 2011

- WTP Expansion
  - \$31,880,000
- Distribution System Improvements through 2015
  - \$9,800,000
- Total Project Planning Costs
  - \$41,680,000
- Add Electrical Replacement as existing system needed repair—\$2M
- Add Milano Tank +\$500K

# Budget Status

- \$38.5M GMAX Contract (under the planning numbers)
- Bidding Process according to TX Government Code 2267
  - Public Advertisement in the Monitor
  - Best Value selection process
- \$1.75M under budget through 90% buyout
- Contingency - ~\$400K used, \$1.85M unused

# Budget Status

Bid Package	Scope	Number of Bidders	Best Value Bidder	Amount
01	Process Equipment & Pumps	22	Multiple Manufacturers	\$2,388,331
02	Generators	4	Cummins Southern Plains	\$230,303
03	2 MG Clearwell	3	DN Tanks	\$1,281,500
04	1 MG Elevated Storage Tank	4	Landmark	\$1,661,000
05R	Concrete	4	EMI/Saenz Utilities	\$5,097,360
06	Process Mechanical & Yard Piping	3	CDM Constructors	\$4,829,000
07	Miscellaneous Metals	3	CDM Constructors	\$350,000
08	Electrical and Instrumentation	6	KST Electric	\$6,267,461
10R	Offsite Pipelines	6	JF Utility	\$1,374,532

- ~\$3M worth of buyout remaining



# Water Treatment Plant Progress

- Earthwork & Concrete 60% complete
- Underground Piping 60% complete
- Underground electrical 20% complete
- Process equipment has been released and scheduled for Q1 2014 delivery



# Offsite Distribution System Progress

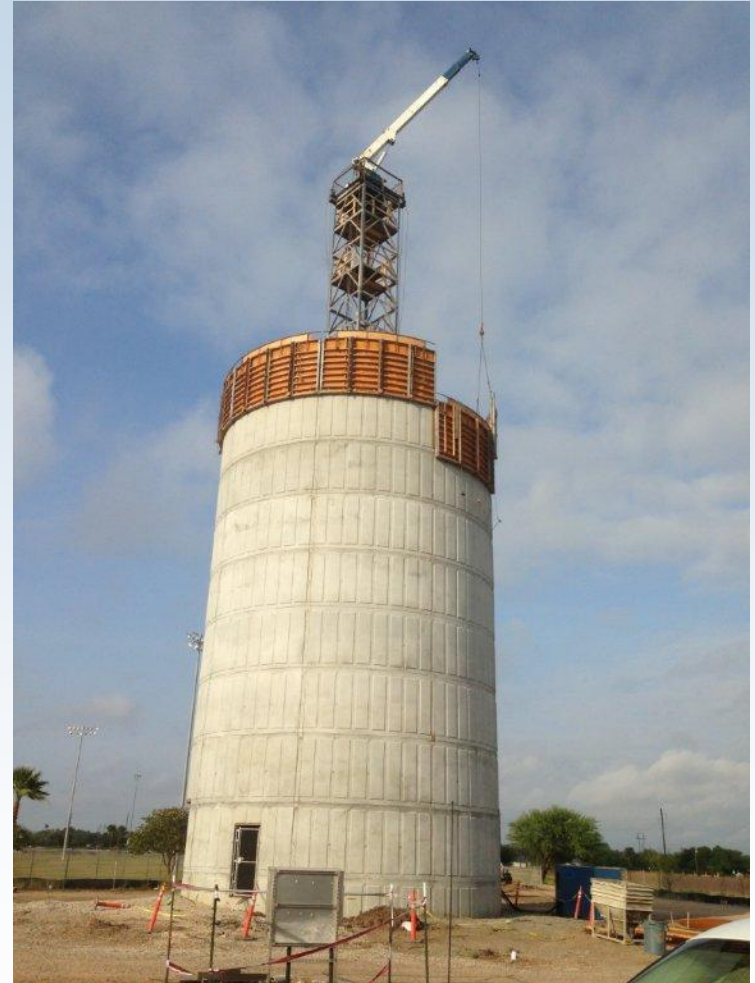
- 18<sup>th</sup> street 12" main complete
- Texas Blvd 20" main 90% complete
- 6<sup>th</sup> street 12" main 30% complete
- 1 MG Elevated Storage Tank 60% complete
- Milano Elevated Storage Tank bid package to be released next month





# Schedule Status

- New 1MG EST in service March 2014
- New 8MGD facility online November 2014 including
  - Raw Water Pump Station
  - Chemical Building
  - Dewatering Facilities
  - High Service Pump Station
  - 2 MG Clearwell
- Overall Project Completion May 2015



# Other Highlights

- Zero Recordable Incidents in over 50,000 labor-hours worked
- Outstanding Quality



# Cost Comparisons

- New Plant 5 Process (8MGD) = \$14.0M
- Plant 2/3/4 Process Expansion (2.18MGD) = \$1.6M
- Plant 2/3/4 Process Rehab/Upgrade (10.3MGD) = \$5.0M
- Offsite = \$7.2M
- New Chemical System Serving Entire Plant (18.3MGD) = \$2.5M
- New Solids Handling/Dewatering Facilities Serving Entire Plant (18.3MGD) = \$2.8M
- New High Service Pump Station and 2MG Clearwell Serving Entire Plant (18.3MGD) = \$5.5M
- New Plant 5 of \$2.34/gal
- Existing Plant 2/3/4 Expansion of \$1.31/gal

# Questions?

- Cost Comparison to other plant
  - Offsite/Dewatering/Electrical Rehab
  - New 8 MGD - \$2.34/gal
  - Expand existing by 2 MGD - \$1.31/gal
  - Total 10 MGD \$2.13/gal
- Other Plants
  - Pharr - \$16M for 3MGD – \$5.33/gal
  - RGC - \$18M for 6 MGD - \$3/gal
  - Austin - \$370M for 50 MGD - \$7.4/gal
  - SJRA - \$180M for 30MGD - \$6/gal
  - City of Houston - \$180M for 80 MGD - \$2.2/gal

# Questions?

- Why CMAR
  - Schedule driver to meet TCEQ requirements
    - PER Sept 2011
    - Sept 2013 – approaching 50% work in place
  - Open Book Process
    - Maximize opportunity for local contractors
    - Break Work in Right Sized subcontracts
    - Transparent
    - Appropriate for water treatment plant rehab due to nature of existing condition
  - Owner Involvement in Selection of Equipment and Long Term Maintenance
  - Savings Returned to OWNER

# Questions?

- CMAR Subcontract Bid Questions
  - Concrete
    - 4 bidders
    - Price difference of 3 low bidders was within 0.5%
    - CDM Constructors recommended Pepper Lawson based on Qualifications
    - City Selected EMI/Saenz at \$5.618M to keep the work local
  - Mechanical
    - 3 bidders
    - City evaluated as CDM Constructors placed a bid
    - CDM Constructors was \$1.5M low